FORM PTO-1390 REV. 5-93	US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEYS DOCKET NUMBER **P00,1252**
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		U.S. APPLICATION NO (if known, see 37 CFR 1.5) **09/582969**

INTERNATIONAL APPLICATION NO. **PCT/DE98/03679**	INTERNATIONAL FILING DATE **15 DECEMBER 1998**	PRIORITY DATE CLAIMED **09 JANUARY 1998**

TITLE OF INVENTION **Method and Apparatus for Relocating A Part of A Service Logic Program and for Communication Between the Relocated Part and the Part of this Service Logic Program Remaining at the Service Provider in an Intelligent Network**

APPLICANT(S) FOR DO/EO/US

PETER MORITZ

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒   This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.

2. ☐   This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.

3. ☒   This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay.

4. ☒   A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. ☒   A copy of International Application as filed (35 U.S.C. 371(c)(2)) -drawings attached.
      a. ☒   is transmitted herewith (required only if not transmitted by the International Bureau).
      b. ☐   has been transmitted by the International Bureau.
      c. ☐   is not required, as the application was filed in the United States Receiving Office (RO/US)

6. ☒   A translation of the International Application into English (35 U.S.C. 371(c)(2) - drawings attached.

7. ☒   Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3))
      a. ☐   are transmitted herewith (required only if not transmitted by the International Bureau).
      b. ☐   have been transmitted by the International Bureau.
      c. ☐   have not been made; however, the time limit for making such amendments has NOT expired.
      d. ☒   have not been made and will not be made.

8. ☐   A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).

9. ☒   An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).

10. ☒   A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒   An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98; **(PTO 1449, Prior Art, Search Report)**.

12. ☒   An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included.
      (SEE ATTACHED ENVELOPE)

13. ☒   Amendment "A" prior to action.
     ☐   A SECOND or SUBSEQUENT preliminary amendment.

14. ☐   A substitute specification.

15. ☐   A change of power of attorney and/or address letter.

16. ☒   Other items or information:

      a. ☒ Request for approval of drawing changes, **1 Sheet of Drawings, single Figure.**

      b. ☒ **Abstract Replacement Page, page 10**

      c. ☒ EXPRESS MAIL # EL 544622872US dated July 7, 2000.

U.S. APPLICATION NO (if known see 37 CFR 1.5) **09/582969**	INTERNATIONAL APPLICATION NO **PCT/DE98/03679**	ATTORNEY'S DOCKET NUMBER **P00,1252**

17. ☒ The following fees are submitted:	CALCULATIONS	PTO USE ONLY

BASIC NATIONAL FEE (37 C.F.R. 1.492(a)(1)-(5):

Search Report has been prepared by the EPO or JPO $840.00

International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) . . $670.00

No international preliminary examination fee paid to USPTO (37 C.F.R. 1.482) but international search fee paid to USPTO (37 C.F.R. 1.445(a)(2) $760.00

Neither international preliminary examination fee (37 C.F.R. 1.482) nor international search fee (37 C.F.R. 1.445(a)(2) paid to USPTO $970.00

International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) . . . . $ 96.00

	CALCULATIONS	PTO USE ONLY
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 840.00	
Surcharge of $130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 C.F.R. 1.492(e)).	$	

Claims	Number Filed	Number Extra	Rate		
Total Claims	14 - 20 =	0	X $ 18.00	$	
Independent Claims	02 - 3 =	0	X $ 78.00	$	
Multiple Dependent Claims		$260.00 +		$	
TOTAL OF ABOVE CALCULATIONS =				$ 840.00	
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 C.F.R. 1.9, 1.27, 1.28)				$	
SUBTOTAL =				$ 840.00	
Processing fee of $130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$	
TOTAL NATIONAL FEE =				$ 840.00	
Fee for recording the enclosed assignment (37 C.F.R. 1.21(h). The assignment must be accompanied by an appropriate cover sheet (37 C.F.R. 3.28, 3.31). $40.00 per property +					
TOTAL FEES ENCLOSED =				$ 840.00	
				Amount to be refunded	$
				charged	$

a. ☒ A check in the amount of $ _840.00_ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of $ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 08-2290. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 C.F.R. 1.494 or 1.495 has not been met, a petition to revive (37 C.F.R. 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

Steven H. Noll
SIGNATURE

SEND ALL CORRESPONDENCE TO:

Hill & Simpson
A Professional Corporation
85th Floor Sears Tower
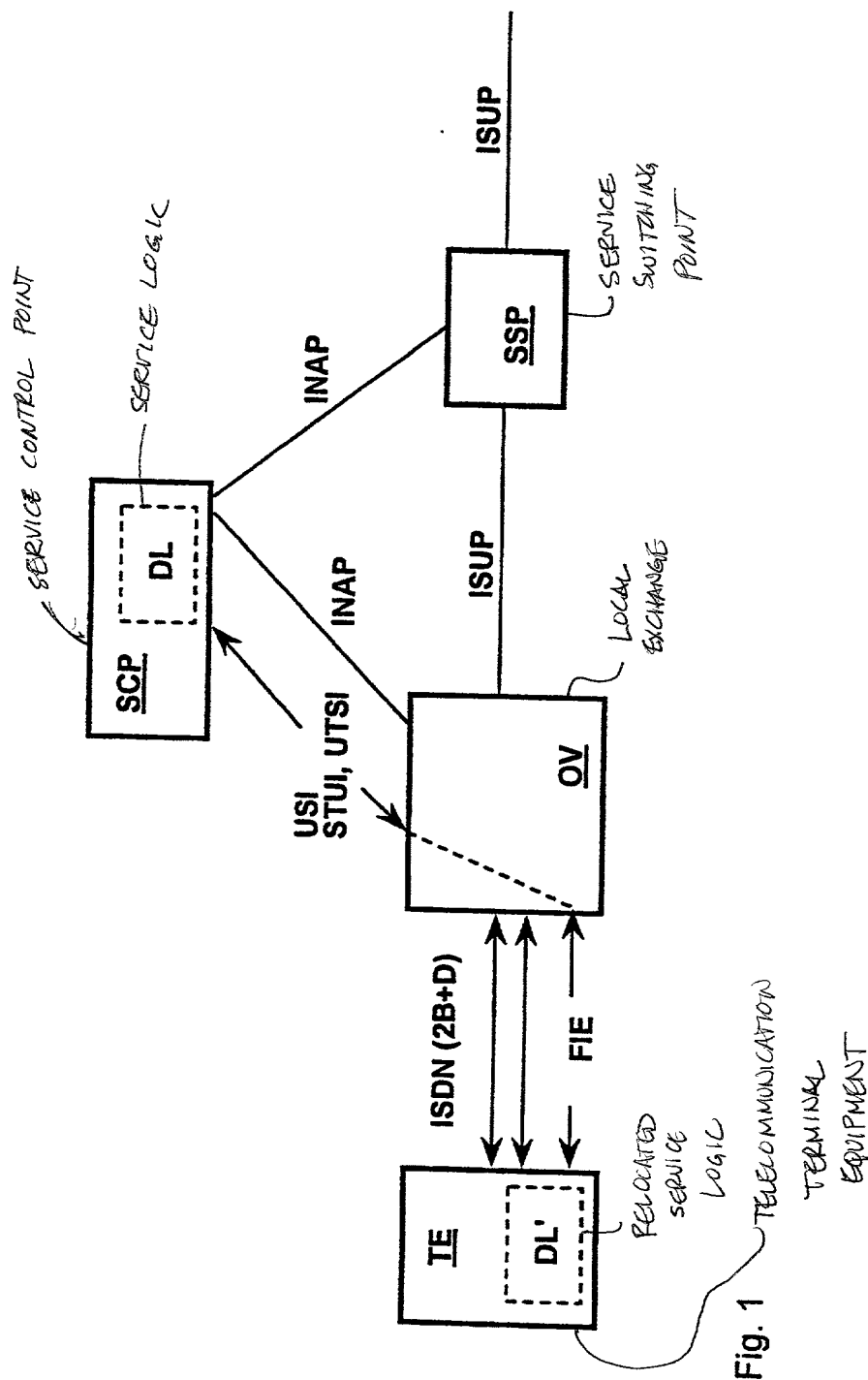Chicago, Illinois 60606

Steven H. Noll
NAME

_28,982_
Registration Number

BOX PCT

IN THE UNITED STATES ELECTED OFFICE

OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5   APPLICANT(S):   Peter Moritz

DOCKET NO: P00,1252

INTERNATIONAL APPLICATION NO: PCT/DE98/03679

INTERNATIONAL FILING DATE: 15 DECEMBER 1998

INVENTION: **METHOD AND APPARATUS FOR RELOCATING A**

10   **PART OF A SERVICE LOGIC PROGRAM AND FOR**
                      COMMUNICATION BETWEEN THE RELOCATED
                      PART AND THE PART OF THIS SERVICE LOGIC
                      PROGRAM REMAINING AT THE SERVICE PROVIDER
                      IN AN INTELLIGENT NETWORK

15   Assistant Commissioner for Patents,
Washington, D.C. 20231

REQUEST FOR APPROVAL OF DRAWING CHANGES

Dear Sir:

    The Applicants respectfully request consideration and approval of

20   changes made to the Figure in order to label previously unlabeled blocks in

conformance with U.S. Patent practice.

Respectfully submitted,

Steven H. Noll (Reg. No. 28,982)

Steven H. Noll
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85th Floor Sears Tower
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(312) 876-0200
Attorneys for Applicant

25

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1/1

Fig. 1

BOX PCT

IN THE UNITED STATES ELECTED OFFICE

OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER THE PATENT COOPERATION TREATY-CHAPTER II

AMENDMENT "A" PRIOR TO ACTION

APPLICANT(S):   Peter Moritz

DOCKET NO: P00,1252

INTERNATIONAL APPLICATION NO: PCT/DE98/03679

INTERNATIONAL FILING DATE: 15 DECEMBER 1998

INVENTION: **METHOD AND APPARATUS FOR RELOCATING A PART OF A SERVICE LOGIC PROGRAM AND FOR COMMUNICATION BETWEEN THE RELOCATED PART AND THE PART OF THIS SERVICE LOGIC PROGRAM REMAINING AT THE SERVICE PROVIDER IN AN INTELLIGENT NETWORK**

Assistant Commissioner for Patents,
Washington, D.C. 20231

Sir:

    Applicants amend the above-identified PCT application as follows, and request entry of the Amendment prior to examination in the United States National Examination Phase.

IN THE SPECIFICATION:

    On page 1:

    after line 5, as a separate line before line 6, insert the following heading:

      --BACKGROUND OF THE INVENTION--;

    delete lines 6-7 and insert the following:

    --Increased advances in the use of intelligent networks (IN) are

occurring in the field of telecommunications. These advances have relied upon an--;

delete lines 12-17 and insert the following paragraph:

--There are three critical function units in an intelligent network: call-handling functions (for example, call handling, the basic functions of telecommunication networks); service execution functions (for example, switching, resource control); and service management functions SMF (including development, offering, administering IN services).--;

line 19, replace "thereat" with --in the SCP--;

line 20, replace "whereby" with --wherein--;

line 21, delete "respectively"; and delete "here";

line 25, replace "The service logic thereby" with --Hence, the service logic--;

line 26, replace "for instance" with --such as--; and

line 28, after ")" insert --, for example--.

On page 2:

line 1, delete "(for instance"; after "or" insert --,--; and replace ")" with --, for instance,--;

line 4, replace "for instance" with --such as--;

after line 11, as a separate line before line 12, insert the following heading:

--SUMMARY OF THE INVENTION--;

line 15, replace "object is" with --and other objects are--; replace "in that" with --by--; and delete "is defined";

line 17, replace "thereat" with --at the various entities--;

line 20, after "example" insert --,--; and

delete lines 29 and 30.

On page 3:

line 2, replace "therewith" with --according to the present invention--; and replace "meaningful" with --significant--;

line 4, replace "meaningful" with --significant--; and replace "for example" with --e.g.--;

replace line 5 with the following: --central entity and the relocated part (i.e., the terminal equipment). The--;

delete lines 8 and 9 and insert the following:

--Additional advantages and novel features of the invention will be set forth, in part, in the description that follows and, in part, will become apparent to those skilled in the art upon examination of the following or may be learned by practice of the invention. The advantages of the invention may be realized and attained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference is made to the attached Figure. This Figure shows a structure with a part of an intelligent network according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--;

line 13, replace "The" (first occurrence) with --A--; delete "thereby"; and replace "the" (third occurrence) with --a--; and

line 25, delete "[...] for the".

On page 4:

replace lines 1-13 with the following paragraph:

--the connection is automatically operational when the device that contains the relocated part is connected or turned on; high outage

dependability and recovery capability after a connection outage; employment of the existing physical connections of the external device to the IN; parallel payload channels dare not be influenced. The service logic must thereby satisfy the following conditions: no manual interventions needed at the device for administration and operation; security assured, for instance by unambiguously assigned identities, whereby the existing numberings should be employable for the addressing; and suitable for a multitude of device types and interfaces.--

line 17, after "as" insert --a--;

line 18, replace "They are inventively" with --The FIE elements--; and

line 26, delete "thereby".

On page 5:

line 3, delete ", respectively,";

line 12, after "Java" insert --®--;

line 13, delete "is already prepared for this"; and after "Java" insert --®--;

line 14, replace "JTAPI" with --(JTAPI) is already prepared for this--;

line 15, replace "this" with --JTAPI--;

line 18, after "Java" insert --®--;

line 20, replace ";" with --and--;

line 21, after "Java" insert --®--;

line 23, replace "meaningful" with --significant--;

line 26, replace "ensues" with --is performed--; and

line 27, replace "What is thereby involved is" with --Transmission of the charge ticket includes--.

On page 6:

line 1, replace "Since it" with --It--; and after line 17 insert the following paragraph:

--While this invention has been described in connection with what are presently considered to be the most practical and preferred embodiments, it is to be understood that the invention is not limited to the disclosed embodiment, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.--.

On page 7:

delete lines 1-28, respectively.

IN THE DRAWINGS:

The Applicants have filed concurrently herewith a Request for Approval of Drawing Changes in order to label previously unlabeled blocks.

IN THE CLAIMS:

On substitute page 8, line 1, please change "Patent Claims" to --What is claimed is:--.

Delete claims 1-11 on substitute pages 8 and 9 without prejudice or disclaimer.

Please add the following new claims 12 - 25:

12.   A method for offering telecommunication service in an intelligent network comprised of a service logic, the method comprising:

implementing a first part of the service logic within a central unit; and implementing a second part of the service logic outside the central unit.

13.   The method according to claim 12, wherein the second part of the service logic is implemented in the telecommunication terminal equipment of a service user.

14.   The method according to claim 13, wherein a connection exists between the first part of the service logic and the second part of the service logic.

15.   The method according to claim 14, wherein the connection between the first part of the service logic and the second part of the service logic uses an existing connection of the telecommunication terminal equipment with the central unit.

16.   The method according to claim 14, wherein at least a part of the connection of the first part of the service logic and the second part of the service logic utilizes an ISDN connection.

17.   The method according to claim 12, wherein charge information is at least partly generated by the second part of the service logic.

18.   The method according to claim 17, wherein the second part of the service logic sends a proposal for the charge information to the first part of the service logic, which then further processes the charge information.

5   19.   The method according to claim 18, wherein the first part of the service logic checks whether a charge proposal is acceptable when the charge proposal is received by the second part of the service logic, and initiates review of the second part of the service logic when a result of this check is positive.

10   20.   The method according to claim 18, wherein review of the second part of the service logic is initiated when the proposal for the charge information fails to arrive at the first part of the service logic.

21.   The method according to claim 18, wherein the first part of the service logic checks whether a charge proposal is acceptable when the 15   charge proposal is received by the second part of the service logic, and forwards the charge proposal to an entity responsible for billing when a result of this check is positive

22.   A terminal equipment in a telecommunications network that is an intelligent network, comprising:

20   a storage that stores a service logic, the service logic having a first part stored in the terminal equipment and a second part stored in a central part of the intelligent network;

a processor for processing the service logic; and

a communication device for communicating between the first and second parts of the service logic.

23. The terminal equipment according to claim 22, further comprising:

an application programming interface that provides a uniform horizontal interface for the exchange of IN messages between the first part of the service logic stored on the terminal equipment and the second part of the service logic stored in the central part of the intelligent network.

24. The terminal equipment according to claim 23, wherein the application programming interface API is realized in JTAPI based on Java technology.

25. The terminal equipment according claim 23, wherein connection of the terminal equipment to the telecommunications network occurs via an ISDN line.
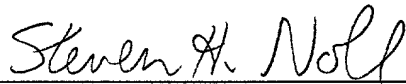
IN THE ABSTRACT

Delete page 10 and replace the Abstract with Replacement Page 10 which is provided herewith on a separate sheet attached to the amendment.

REMARKS

The present amendment makes editorial changes to the specification, drawings, claims and Abstract in order to conform to United States Patent Practice. Additionally, the Applicants include herewith a copy of the new

5   Abstract on a separate page. None of the changes in the claims is intended as a surrender of any of the subject matter within the scope of the original claim language since, as noted above, all of these changes have been made solely to bring the claims into conformity with the requirements of 35 U.S.C. §112, second paragraph.

10   Early consideration of the application is respectfully requested.

Respectfully submitted,

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15   A Professional Corporation
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Abstract

A method is defined with which various parts of a service logic are distributed onto different entities of a system and can collaborate and communicate with one another. An apparatus is specified with which a customer of an intelligent network can use a service at a provider, the service logic thereof running partly centrally at the service provider and partly relocated in, for example, the terminal equipment of the customer.

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METHOD AND APPARATUS FOR RELOCATING A PART OF A SERVICE LOGIC PROGRAM AND FOR COMMUNICATION BETWEEN THE RELOCATED PART AND THE PART OF THIS SERVICE LOGIC PROGRAM REMAINING AT THE SERVICE PROVIDER IN AN

5   INTELLIGENT NETWORK

A farther and farther-reaching use of the technology of intelligent networks IN is being made in the field of telecommunications. What is thereby involved is an architectural concept that, among other things, allows network operators to define and offer telecommunication services for their customers in a simple way. The architecture

10   can be applied to many telecommunication networks such as, for example, PSTN or N-ISDN.

There are three critical function units in an intelligent network:
- call-handling functions (for example, call handling, the basic functions of telecommunication networks)

15   - service execution functions (for example, switching, resource control)
- service management functions SMF (including development, offering, administering IN services).

One result of the SMF is the service logic program that can be loaded onto a service control point SCP and be implemented thereat. It is also possible to

20   distribute this service logic onto a plurality of SCPs, whereby a complete copy of the service logic program is respectively employed here. The service logic program is implemented when a service call from a service user arrives at a switching center (service switching point SSP).

An important point in producing services in an intelligent network is

25   charging for these services. The service logic thereby generates a charge information (charging ticket), for instance in the form TC_CONTINUE(FurnishChargingInformation, SendChargingInformation, Connect) (see Q.1218 with respect thereto). These information are delivered to a central location (billing center) and processed there. The data contained therein are employed

for charging the account of the customer or (for instance in the case of "free phone") the account of the service subscriber or both accounts.

A special characteristic of this procedure is the possibility of also modifying the current charge rate during an existing connection, for instance upon entry into a new rate time,

5   discount given long calls or the like.

With the intensified introduction of computer telephony integration (CTI) and the continued development of distributed applications like Java, the services offered in the IN will also change in future. For this purpose, it will become necessary to install "more intelligent" devices at, for example, the ultimate consumer. In order to

10   also completely exploit the additional possibilities of these devices, it will be necessary to expand the concept of the intelligent networks.

An object of the invention is to offer service providers and service users in a communications network a more flexible possibility of having the service logic needed for an offered service run.

15   This object is achieved in that a method is defined with which various parts of a service logic can be distributed onto various entities of a system and can collaborate and communicate with one another thereat. An apparatus is specified with which a customer of an intelligent network can use a service at a provider, the service logic thereof running partly centrally at the service provider and partly relocated, for

20   example in the terminal equipment of the customer.

The definition and offering of new services becomes possible due to the division of the service logic into a centralized part and a decentralized part. For example, additional information about connections can be made available to the customer, these being capable of being further-processed or interpreted in some other

25   way. Momentarily existing media failures can be avoided. For instance, the customer searches a telephone number via his PC and immediately dials the desired number by pressing a button at the PC. Further usage possibilities of the connections for which a "more intelligent" terminal device is required can be opened up.

Advantageous developments and improvements are provided in the

30   subclaims.

The division of the service logic thereby derives from the type of logic and the service realized therewith. In most instances, it will be meaningful to place the relocated part of the service logic on the terminal equipment of the customer. It is also meaningful to use the connections (for example, ISDN) that already exist between the

5 central entity and the relocated part, i.e., for instance, the terminal equipment. That part of the service logic that is responsible for generating the charge information must be given special consideration.

The invention is explained below on the basis of exemplary embodiments. The Figure thereby shows a possible structure with a part of an intelligent network.

10 The Figure shows a schematic arrangement of the distribution of a service logic in an intelligent network IN and the communication between the parts of the service logic required therefor.

The central part of the service logic DL is thereby located in the service control point SCP. The relocated part of the corresponding service logic DL' is located on the

15 telecommunication terminal equipment TE of the service user in this example. The two parts of the service logic are connected to one another by a local exchange OV. The terminal equipment is thereby connected to the local exchange OV with an ISDN line. For example, the control signals are communicated on this connection with facility information elements FIE via the D-channel of the ISDN line. The local

20 exchange OV is in turn connected to the service control point SCP on which the central part of the service logic runs. This connection occurs with the expanded INAP (intelligent network application protocol). At the other side, the service user is also connected via the local exchange to a switching node (service switching point SSP) of the intelligent network.

25 In this case, [...] for the communication of the relocated part of the service logic DL' with the central part of the service logic DL can be implemented on the SCP with communication mechanisms that are already known and that must be somewhat expanded for this purpose.

The data communication connection between the relocated parts and the

30 central part of the service logic must meet the following demands:

- the connection is automatically operational when the device that contains the relocated part is connected or turned on;

- high outage dependability and recovery capability after a connection outage;

5 • employment of the existing physical connections of the external device to the IN;

- parallel payload channels dare not be influenced.

The service logic must thereby satisfy the following conditions:

- no manual interventions needed at the device for administration and

10 operation;

- security assured, for instance by unambiguously assigned identities, whereby the existing numberings should be employable for the addressing;

- suitable for a multitude of device types and interfaces.

What are referred to as facility information elements FIE can be employed

15 in this case for the first part of the link that, for example, leads via an existing ISDN connection from the service user to the local exchange. The D-channel provided for signalling in ISDN can be employed as connecting path. These FIE elements are already known from the ETS 300 196-1. They are inventively assigned the job of functioning as containers for IN services. The content of these FIEs, normally referred

20 to as "component", is "pre-"used in order to control what are referred to as supplementary services. The exact structure of the components is subject to the rules of BER and ASN.1. No expansion in the definitions of the FIE in the Standard is necessary.

User to service information (USI) signalling has already been designed for

25 "call unrelated services" such as, for example, the short message service. This is thereby composed of two parts: the service-to-user information (STUI) part and, in the opposite direction, the user-to-service information (UTSI) part.

Up to now, this signalling was not yet employed for the service control. As a result of an expansion of the USI method standardized in the INAP, the control of the service

30 logic can be implemented here via the CCS7 network that already exists.

The following operations must be transferred from the norm Q.1218 (in a more recent generation, Q.1228, Capability Set CS-2 for intelligent networks) and must be adapted or, respectively, recreated:

ReportUTSI	(OV→SCF)	Reports UTSI information elements (like SSF-SCF interface)
RequestReportUTSI	(SCF→OV)	Requests the monitoring of UTSI elements (like SSF-SCF interface)
SendSTUI	(SCF→OV)	Requests an STUI information element at the SSF (like ITU-T Q.1228 SSF-SCF).

In this solution, one is dependent on the existence of an ISDN connection to the terminal equipment. In order to assure a greater variety of terminal equipment and interfaces, a further possible realization composed of Java technology is available. A programming interface is already prepared for this, what is referred to as the Java telephony application programming interface JTAPI. A description of this is found, for example, at http://java.sun.com/products/jtapi.

Applications in the telecommunications area can be realized in a simple way with the object-oriented development environment in the modular system. The JTAPI call model is composed of six different Java objects that respectively represent a conceptual or physical entity in the telecommunication. Various hardware platforms and software interfaces are covered; a security mechanism is likewise already provided. (Java is a trademark of Sun Microsystems.)

The charge information is again considerably separately below. It can be meaningful that a charge information ticket is not generated from the central entity but from the part of the service logic that is located in the relocated part of the service logic.

The transmission of the charge ticket ensues according to the same strategy that was already described in detail above. What is thereby involved is the charging function in conformity with the contract between network operator, subscriber and customer.

Since it must be assured, however, that no fraudulent tickets proceed to the billing center, which then processes the tickets.

Falsifications can be prevented by traditional methods like the insertion of a signature. Another possibility of preventing fraudulent tickets is performed by checking all charge

5   tickets with the central part of the service logic. Thus, the charge tickets of the relocated part of the service logic are viewed as "proposals" or "drafts" that can be accepted, modified or rejected by the central part of the service logic before they are forwarded for final processing to the billing center (the central entity that monitors and logs the charging of the service offering).

10   When the central part of the service logic receives such a charge ticket, it should review the plausibility of the requested charge. Insofar as this is assured, the ticket can be forwarded to the billing center with or without changes.

When the charge tickets received from the relocated entity are not correct or fail to arrive, the central part of the service logic must trigger a reaction. This can occur due

15   to transmission errors or as a result of an explicit manipulation. Possible reactions are, for example, the immediate release of the connection, generating a "fraud ticket" or at least overwriting the incorrect ticket.

List of References

ETS 300 196-1 (August 1993)

Integrated Services Digital Network (ISDN);

Generic functional protocol for the support of supplementary services; Digital

5   Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol Specification

ITU-T Recommendation Q.1218 (10/95)

Intelligent Network,

Interface Recommendation for Intelligent Network CORRESPONDS-1

List of Abbreviations

10	ASN:1	Abstract Syntax Notation 1
	BER	Basic Encoding Rules
	CCS7	Common Channel Signalling No. 7
	CTI	Computer Telephony Integration
	FIE	Facility Information Element
15	INAP	Intelligent Network Application Protocol
	ISDN	Integrated Services Digital Network
	ISUP	Integrated Services User Part
	JTAPI	Java Telephony Application Programming Interface
	PSTN	Public Switched Telephone Network
20	USI	User to Service Information
	UTSI	User to Service Information
	SCCP	Signalling Connection Control Part
	SCF	Service Control Function
	SCP	Service Control Part
25	SMF	Service Management Function
	SSP	Service Switching Point
	STUI	Service to User Information
	TCAP	Transaction Control Application Part

Patent Claims

1. Method for offering a telecommunication service in an intelligent network, composed of a service logic, whereby

-- a first part of the service logic (DL) is implemented in a central unit (SCP)

5   and

-- a second part of the service logic (DL') is implemented outside the central unit,

characterized in that

the second part of the service logic (DL') sends a proposal for the charge information

10   to the first part of the service logic (DL), whereat it is then further-processed.

2. Method according to claim 1, characterized in that, upon receipt of a charge proposal by the second part of the service logic (DL'), the first part of the service logic (DL) checks whether the charge proposal is acceptable and, given a negative result of this check, initiates suitable measures for reviewing the second part

15   of the service logic (DL').

3. Method according to claim 1 or 2, characterized in that, upon receipt of a charge proposal by the second part of the service logic (DL'), the first part of the service logic (DL) checks whether the charge proposal is acceptable and, given a positive result of this check, forwards the charge proposal to an entity (billing center)

20   responsible for the billing.

4. Method according to claim 1, characterized in that suitable measures for reviewing the second part of the service logic (DL') are initiated given a failure of the charge proposal to arrive.

5. Method for offering a telecommunication service in an intelligent

25   network, composed of a service logic, whereby

-- a first part of the service logic (DL) is implemented in a central unit (SCP) and

-- a second part of the service logic (DL') is implemented outside the central unit,

30   characterized in that

a connection of the first (DL) and of the second part (DL') of the service logic is
produced:

       --   from the central unit (SCP) to a switching center (OV) via a first

              transmission protocol (USI, INAP),

5   --   from the switching center (OV) to the location (TE) of the implementation

              of the second part of the service logic (DL') via a second transmission

              protocol (ISDN, FIE).

6. Method according to claim 5, characterized in that the part of the
service logic implemented outside the central unit is implemented in the

10   telecommunication terminal equipment (TE) of the service user.

7. Method according to one of the claims 5 or 6, characterized in that the
charge information is at least partly generated by the second part of the service logic
(DL').

8. Terminal equipment in a telecommunications network, comprising

15   a) means for storing a service logic,

b) means for processing a service logic, and

c) means for communication with a central unit in an intelligent network and with

d) means for generating a charge information.

9. Terminal equipment according to claim 8, characterized by an

20   application programming interface API that offers a uniform horizontal interface for
the exchange of IN messages between the part of the service logic stored on the
terminal equipment and the part of the service logic stored in the central part of the
intelligent network.

10. Terminal equipment according to claim 9, characterized in that the API

25   is realized in JTAPI based on Java technology.

11. Terminal equipment according to one of the claims 8 through 10,
characterized in that the connection of the terminal equipment to the
telecommunications network occurs via an ISDN line.

Abstract

Method and Apparatus for Relocating a Part of a Service Logic Program and for Communication Between the Relocated Part and the Part of this Service Logic Program Remaining at the Service Provider in an Intelligent Network

5   A method is defined with which various parts of a service logic (DL, DL') are distributed onto different entities of a system and can collaborate and communicate with one another thereat. An apparatus is specified with which a customer of an intelligent network can use a service at a provider, the service logic thereof running partly centrally at the service provider and partly relocated in, for example, the

10   terminal equipment of the customer.
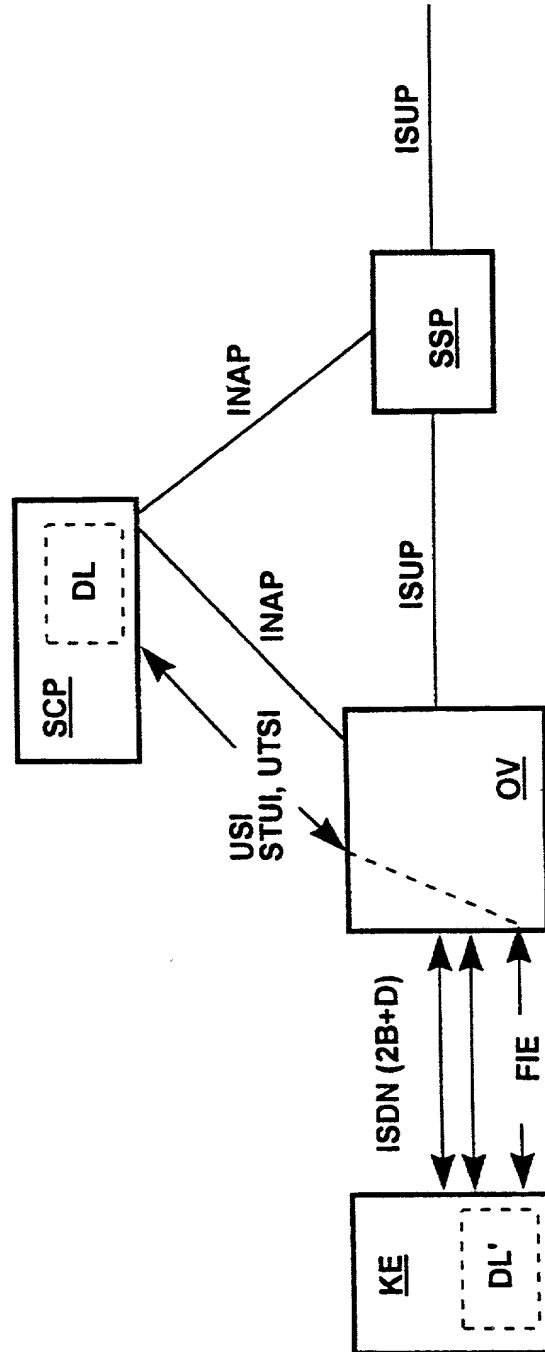
Declaration and Power of Attorney For Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

As a below named inventor, I hereby declare that:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

My residence, post office address and citizenship are as stated below next to my name,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

<u>Vorrichtung und Verfahren zur Auslagerung eines Teils eines Dienstlogik Programms und zur Kommunikation zwischen dem ausgelagerten Teil und dem beim Diensterbringer verbliebenen Teil dieses Dienstlogik Programms in einem Intelligenten Netz.</u>

_____
_____
_____
_____
_____
_____

deren Beschreibung

the specification of which

(zutreffendes ankreuzen)

(check one)

[X] hier beigefügt ist.

[ ] is attached hereto.

[ ] am _____ als
PCT internationale Anmeldung
PCT Anmeldungsnummer _____
eingereicht wurde und am _____
abgeändert wurde (falls tatsächlich abgeändert).

[ ] was filed on _____ as
PCT international application
PCT Application No. _____
and was amended on _____
(if applicable)

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

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German Language Declaration

Prior foreign appplications
Priorität beansprucht

<u>Priority Claimed</u>

<u>19800644.6</u>	<u>Germany</u>	<u>09.Januar 1998</u>	☒	☐
(Number)	(Country)	(Day Month Year Filed)	Yes	No
(Nummer)	(Land)	(Tag Monat Jahr eingereicht)	Ja	Nein

(Number)	(Country)	(Day Month Year Filed)	☐	☐
(Nummer)	(Land)	(Tag Monat Jahr eingereicht)	Yes	No
			Ja	Nein

(Number)	(Country)	(Day Month Year Filed)	☐	☐
(Nummer)	(Land)	(Tag Monat Jahr eingereicht)	Yes	No
			Ja	Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35. United States Code. §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occured between the filing date of the prior application and the national or PCT international filing date of this application.

| (Application Serial No.) | (Filing Date) |
| (Anmeldeseriennummer) | (Anmeldedatum) |

| (Status) | (Status) |
| (patentiert, anhängig, aufgegeben) | (patented, pending, abandoned) |

| (Application Serial No.) | (Filing Date) |
| (Anmeldeseriennummer) | (Anmeldedatum) |

| (Status) | (Status) |
| (patentiert, anhängig, aufgeben) | (patented, pending, abandoned) |

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklarung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden koennen, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: *(Name und Registrationsnummer anführen)*

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

And I hereby appoint

Messrs. John D. Simpson (Registration No. 19,842) Lewis T. Steadman (17,074), William C. Stueber (16,453), P. Phillips Connor (19,259), Dennis A. Gross (24,410), Marvin Moody (16,549), Steven H. Noll (28,982), Brett A. Valiquet (27,841), Thomas I. Ross (29,275), Kevin W. Guynn (29,927), Edward A. Lehmann (22,312), James D. Hobart (24,149), Robert M. Barrett (30,142), James Van Santen (16,584), J. Arthur Gross (13,615), Richard J. Schwarz (13,472) and Melvin A. Robinson (31,870), David R. Metzger (32,919), John R. Garrett (27,888) all members of the firm of Hill, Steadman & Simpson, A Professional Corporation.

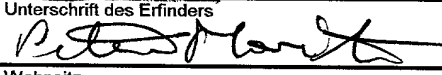| Telefongespräche bitte richten an: *(Name und Telefonnummer)*	Direct Telephone Calls to: *(name and telephone number)*
	312/876-0200 Ext. _____

Postanschrift:

Send Correspondence to:

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Voller Name des einzigen oder ursprünglichen Erfinders: MORITZ, Peter	Full name of sole or first inventor:
Unterschrift des Erfinders Datum *10.Dez.1998*	Inventor's signature Date
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Staatsangehörigkeit Bundesrepublik Deutschland	Citizenship
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Voller Name des zweiten Miterfinders (falls zutreffend):	Full name of second joint inventor, if any:
Unterschrift des Erfinders Datum	Second Inventor's signature Date
Wohnsitz	Residence
	Citizenship
	Post Office Address

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).